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SIDLEY AUSTIN LLP
717 NORTH HARWOOD
SUITE 3400
DALLAS, TX 75201

| EXAMINER | |
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| QUIETT, CARRAMAH J | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

***Response to Amendment***

1. The amendment(s), filed on 10/02/2008, have been entered and made of record. Claims 1-8 and 10-20 are pending.

***Response to Arguments***

2. Applicant's arguments filed 10/02/2008 have been fully considered but they are not persuasive.

In the Final Office Action dated 07/11/2008, the Examiner rejected claims 1-8, 10-18, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Sano (U.S. Pat. #6,184,940 – herein referred to as Sano) in view of Shinotsuka et al. (U.S. Pat. #6,191,408 – herein referred to as Shinotsuka) and Skow (U.S. Pat. #6,995,791 herein referred to as Skow). However, in the Remarks filed 10/02/2008, the Applicant asserts that Sano, Shinotsuka, and Skow, individually and collectively, do not disclose or suggest a white balance circuit that performs white balance processing on both linear and logarithmic signals.

The Examiner respectfully disagrees based on the following.

Claim 1 recites:

An image-sensing apparatus comprising:
a solid-state image sensor including:
a plurality of pixels that perform photoelectric conversion so as to generate output signals that vary with a first characteristic in a first region such that the output signals vary linearly with respect to an amount of incident light and with a second characteristic in a second region such that the output signals vary logarithmically with respect to the amount of incident light; and
a plurality of types of color filters provided in vicinity of the pixels; and
*a white balance circuit that performs white balance processing by performing, on at least one of different types of chrominance signals outputted as*

> *corresponding to the different types of color filters from the solid-state image sensor, different calculation operations fit respectively for the first and second characteristics in the first and second regions so as to thereby generate new output data.* [Emphasis Added]

As stated in the previous office action, Sano, as modified by Shinotuska and Skow discloses the white balance circuit as recited in claim 1. Sano discloses a white balance circuit (fig. 1, refs. 130/140), which performs white balance adjustment for the long color signal and the short color signal. Please read col. 4, line 15 -- col. 5, line 55; and see fig. 2. The Examiner understands that Sano does not expressly teach the image sensor including a first characteristic in a first region such that the output signals vary linearly with respect to the amount of incident light and with a second characteristic in a second region such that the output signals vary logarithmically with respect to amount of incident light; and a plurality of types of color filters provided in vicinity of the pixels; and chrominance signals outputted as corresponding to the different types of color filters.

This is why col. 6, lines 21-36 of Shinotsuka is utilized for teaching the image sensor (fig. 4, ref. 1) including a first characteristic in a first region such that the output signals vary linearly with respect to the amount of incident light and with a second characteristic in a second region such that the output signals vary logarithmically with respect to amount of incident light.

Please note that the object of Shinotsuka's invention is to provide a photosensor signal processing apparatus which can correct variations in characteristics between pixels of an image sensor (col. 2, lines 11-17). Further in figure 4, Shinotsuka illustrates a photosensor signal processing apparatus (5). This apparatus includes a correction data storage device (6A) which stores a set of correction data about the photosensors for the correction of individual output values of the photosensors, and a correcting device (6B) for correcting the individual output

values of the photosensors on the basis of the correction data. The photosensor signal processing apparatus (5) can correct the variations in output characteristic so that the output characteristics of all the photosensors (linear function region and logarithmic function region) are identical with the standard sensor output characteristic (col. 6, lines 21-36). Then in figure 12, Shinotsuka explains that the photosensor signal processing apparatus (5) can compensate for the change in the output of the image sensor due to variation of ambient temperature. This is done so, by utilizing a temperature sensor which transmits detected temperature information to a temperature compensating unit (col. 12, line 45 – col. line 13, line 18).

The photosensor signal processing apparatus (5) of Shinotsuka gives one skilled in the art the motivation to combine Shinotsuka with Sano in order to suppress noise due to the temperature variation of ambient light (Shinotsuka, col. 2, lines 11-25, col. 3, lines 28-38, col. 6, lines 21-36, col. 12, line 45 – col. line 13, line 18).

Further, Skow is used to teach a plurality of types of color filters provided in vicinity of the pixels; and chrominance signals outputted as corresponding to the different types of color filters (col. 5, lines 32-56; col. 6, lines 23-25; col. 8, lines 24-30).

For claim 7, the Examiner also disagrees with the Applicants assertions. As explained above, Sano, as modified by Shinotuska and Skow handles white balance correction for both linear and logarithmic signals. Respectfully, please refer to the explanation for claim 1 above.

For claim 18, the Examiner also disagrees with the Applicants assertions. As explained above, Sano, as modified by Shinotuska and Skow handles white balance correction for both linear and logarithmic signals. Respectfully, please refer to the explanation for claim 1 above.

Accordingly, the Examiner respectfully maintains the rejection of claims 1-8, 10-18, and 20 under 35 U.S.C. § 103(a) as being unpatentable over Sano in view of Shinotsuka et al. and Skow.

Also, the Examiner rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Sano in view of Shinotsuka and Skow as applied to claim 18 above, and further in view of Sano et al. (U.S. Pat #6,972,800 – herein referred to as Sano et al.). However, the Applicant has also traversed the rejection to claim 19. The Examiner respectfully disagrees with the Applicants assertions. As explained above, Sano, as modified by Shinotuska and Skow handles white balance correction for both linear and logarithmic signals. Respectfully, please refer to the explanation for claim 1 above. Accordingly, the Examiner respectfully maintains the rejection of claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Sano in view of Shinotsuka and Skow as applied to claim 18 above, and further in view of Sano et al.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carramah J. Quiett whose telephone number is (571)272-7316. The examiner can normally be reached on 8:00-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NgocYen Vu can be reached on (571) 272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. J. Q./
Examiner, Art Unit 2622
October 15, 2008

*/Ngoc-Yen T. VU/*
***Supervisory Patent Examiner, Art Unit 2622***